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May, 1977

ANALYSIS OF RESPONSES TO
LARKSPUR FERRY QUESTIONNAIRES

February 6 and 7 (all trips)

and

March 18 (A.M. commute only)

Ferries Larkspur
Trans. SF bay area
" Marin co.

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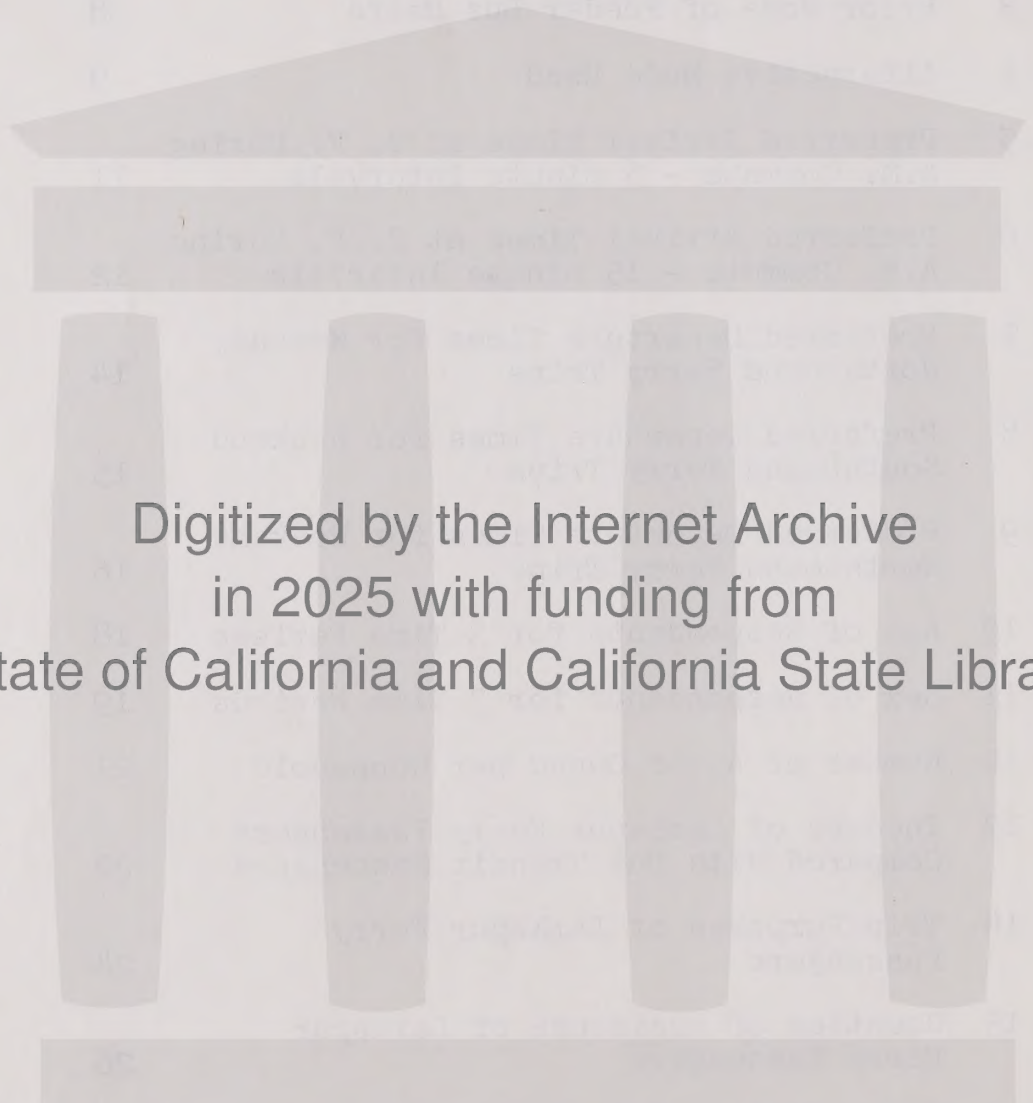
ANALYSIS OF RESPONSES TO
LARKSPUR FERRY QUESTIONNAIRES

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ANALYSIS OF RESPONSES TO
LARKSPUR FERRY QUESTIONNAIRES
February 6 and 7 and March 18

INTRODUCTION

On three days during February and March, questionnaires were distributed aboard the Larkspur Ferries. These questionnaires were primarily designed to provide origin and destination information, preferred arrival and departure times, pre-ferry mode of transportation, and various socio-economic information.

The survey on Sunday and Monday, February 6 and 7, was designed to provide a data base for all service: commute¹, midday and weekend. Long questionnaires (shown in the Appendix on pages A-2 and A-3) were distributed on all ferry trips on both days. 1,505 completed questionnaires were returned.

The Friday, March 18, survey was to provide information to fine tune the commute schedule and to improve the feeder bus system. At the time of this survey, passengers on A.M. commute feeder buses were receiving free ferry passage to promote feeder bus usage. Shorter questionnaires (shown in the Appendix on page A-5) were distributed to passengers on the first five southbound trips. 1,137 completed questionnaires were returned. Sample sizes for each ferry trip are shown in the Appendix on page A-1.

¹ For all tabulations in this report, commute is defined as the first 3 trips (leaving Larkspur at 7:10 and 8:30 and leaving San Francisco at 7:50 a.m.) and the last 4 trips (leaving San Francisco at 5:20 and 6:40 and leaving Larkspur at 4:35 and 6:00 p.m.)

The two schedules which were in effect at the time of the surveys are shown below.

Sunday & Monday
February 6 & 7

GOLDEN GATE BRIDGE
HIGHWAY AND TRANSPORTATION DISTRICT
Box 9000, Presidio Station - S.F., CA 94129
Telephones: Marin 453-2100—S.F. 332-6600
SCHEDULE NO. 16—Effective Dec., 1976
San Francisco Ferry Building and Larkspur

WEEKDAYS (except holidays)

Larkspur	San Francisco	Larkspur	
Lv.	Arr.	Lv.	Arr.
7:10	7:45	7:50	8:25
8:30	9:05	9:10	9:50
10:00	10:40	10:50	11:30AM
11:40	12:20	12:30	1:10PM
1:20	2:00	2:10	2:50
3:00	3:40	3:55	4:30
4:35	5:10	5:20	5:55
6:00	6:35	6:40	7:15

SATURDAY, SUNDAY & HOLIDAYS

Larkspur	San Francisco	Larkspur	
Lv.	Arr.	Lv.	Arr.
9:30	10:10	10:20	11:00AM
11:10	11:50	12:05	12:45PM
1:00	1:40	1:55	2:35
2:50	3:30	3:45	4:25
4:40	5:20	5:30	6:10

Holidays—New Year, Washington, Memorial,
Independence and Labor Days

NO SERVICE ON THANKSGIVING
AND CHRISTMAS DAYS



Friday
March 18

GOLDEN GATE FERRY
San Francisco Ferry Building and Larkspur
WEEKDAYS (except holidays)

Larkspur	San Francisco	Larkspur	
Lv.	Arr.	Lv.	Arr.
6:15	6:50	6:55	7:30
7:10	7:45	7:50	8:25
7:40	8:15	8:20	8:55
8:30	9:05	9:10	9:50
9:00	9:35		
10:00	10:40	10:50	11:30AM
11:40	12:20	12:30	1:10PM
1:20	2:00	2:10	2:50
3:00	3:40	3:55	4:30
		4:40	5:15
4:35	5:10	5:20	5:55
5:20	5:55	6:00	6:35
6:00	6:35	6:40	7:15
6:40	7:15	7:20	7:55

SATURDAY, SUNDAY & HOLIDAYS

Larkspur	San Francisco	Larkspur	
Lv.	Arr.	Lv.	Arr.
9:30	10:10	10:20	11:00AM
11:10	11:50	12:05	12:45PM
1:00	1:40	1:55	2:35
2:50	3:30	3:45	4:25
4:40	5:20	5:30	6:10

HOLIDAYS—SEE OTHER SIDE



MAJOR FINDINGS

- A majority of passengers on commute ferry schedules reported that their means of transportation prior to the Larkspur Ferry was Golden Gate Bus Transit; 58% on February 7 and 66% on March 18.
- On Monday, February 7, 43% of the passengers on the two A.M. commute trips arrived at the Larkspur Ferry Terminal on feeder buses. On Friday March 18, when ferry feeder passengers were receiving free ferry passage, 65% of the passengers on the five A.M. commute trips used the feeder buses. During the week immediately following the end of the free ride period, the feeder buses carried an average of 47% of the A.M. commute ferry passengers; during the week from April 28 to May 4, this percentage had dropped to 38%.
- Maps of origins of commuters from the March 18 survey show potential demand for ferry feeder service in the following presently unserved neighborhoods (the number of responses from each neighborhood is given in parentheses):

East Corte Madera	(26)
Terra Linda	(30)
Marinwood	(18)
West Fairfax	(24)
Peacock Gap	(21)
Novato/Ignacio	(65)

Details of this demand are on page 25.

MAJOR FINDINGS - continued

- Commuter's preferred arrival times in San Francisco indicate a need for an arrival shortly before 9:00 A.M. This can be accommodated with three vessels, but not with two if the two most popular arrival times of 7:45 and 8:15 A.M. are continued.
- Annual household incomes of ferry users tended to be much higher than those of the general population in the market area. This is true on midday and weekend service as well as commute service.

	<u>Marin Census¹</u>	<u>Commute</u>	<u>Midday/Weekend</u>
\$15,000- ^{if any} \$24,000	30.4%	24.3%	26.0%
\$25,000 or more	13.7%	52.1%	34.5%

- Users of midday and weekend ferry service had higher incomes than users of Golden Gate Transit "basic" (non-commute) transbay bus service.

	<u>Bus²</u>	<u>Ferry</u>
Less than \$4,000	28%	7%
\$25,000 or more	11%	34%

¹ Average Marin County household income based on 1970 census but updated to a 1974 level based on the Novato special census that year.

² Analysis of Transit Surveys, GGBHTD, Office of Planning and Research September 1976, Page 13.

MEANS OF TRANSPORTATION

Prior Mode

In order to learn what means of transportation ferry passengers used prior to Larkspur Ferry service, both questionnaires asked, "How would you most likely have made this trip if the Larkspur Ferry were not in service?" Results are shown on Table 1 (page 6) with the first column representing the March commuter survey and the next three columns representing the three time periods of the February survey; commute, midday and weekend. Significant findings are as follows:

- During commute hours, from one-half to two-thirds of ferry passengers would have used Golden Gate Bus Transit, were the Larkspur ferry not in service. Approximately 30% would have used automobiles. Based on the average A.M. commute period, patronage during April of 1,033, approximately 270 autos have been diverted from the Bridge and 650 passengers diverted from buses each A.M. commute period. On Sunday, approximately half of the respondents would not have made the trip across the bay, except for the ferry ride, and another 10% would have taken the Sausalito Ferry. 30% would have used automobiles and ~~80%~~ would have used buses.
- During non-commute hours on Monday, February 7, 26% would not have made the trip, 22% would have used the bus and 41% would have used automobiles.

TABLE 1

Modes of Transportation Prior to Larkspur Ferry Service

	<u>Commute Friday, March 18</u>	<u>AM & PM Commute Monday, Feb. 7</u>	<u>Midday Monday, Feb. 7</u>	<u>Weekend Sunday, Feb. 6</u>
	<u>%</u>	<u>%</u>	<u>%</u>	<u>%</u>
Auto/drove alone	24.1	27.2	35.5	26.3
Carpool	4.9	5.5	5.7	4.2
Sausalito Ferry	2.3	4.0	7.8	10.1
GGT Bus	65.6	57.9	21.6	7.6
Other	2.4	4.3	3.7	3.6
Would not have made trip	0.7	1.1	25.7	48.2
TOTAL	100.0	100.0	100.0	100.0
Sample Size	1128	563	245	670

Source: February 6 and 7 and March 18 Surveys.

Access Mode

Both questionnaires asked, "How did you get to the Ferry Terminal?" Responses for southbound trips (for which passengers would be arriving at the Larkspur Ferry Terminal) are shown in Table 2, page 7) and are broken down into A.M. commute, February 7; A.M. commute, March 18; remainder of weekday and weekend. On both days, the percentage of respondents using feeder buses is validated by that percentage as derived from feeder bus and ferry passenger counts. Significant findings are:

Access Mode - continued

- During non-commute periods and on weekends, approximately 80% of ferry passengers arrived at the Larkspur Terminal by automobile.
- During the A.M. commute 43% used the feeder buses on February 7 and 65% used them on March 18 (when use of the feeder buses meant a free ride on the ferry).

TABLE 2

Access to Larkspur Ferry Terminal
Southbound Trips Only

	<u>AM Commute</u> <u>March 18</u>	<u>AM Commute</u> <u>February 7</u>	<u>Remainder</u> <u>of weekday</u> <u>S.B. trips</u>	<u>Weekend</u> <u>Sunday,</u> <u>February 6</u>
	%	%	%	%
Dropped	5.1	7.5	14.1	4.0
Auto/drove	23.7	38.8	53.1	59.4
Carpool	4.8	7.8	11.3	16.3
Feeder Bus	65.2	43.1	14.7	8.9
Bicycle	0.4	0.9	1.1	3.6
Walk	0.5	0.7	1.1	2.0
Taxi	0.1	0.0	0.6	0.2
Other	0.2	1.2	4.0	5.6
TOTAL	100.0	100.0	100.0	100.0
Sample Size	1145	425	177	448

Source: February 6 and 7 and March 18 Surveys.

Prior Mode - Feeder Bus Users

Answers on the February survey to the two questions just discussed (prior mode and access mode) were cross tabulated to determine what mode feeder bus passengers would have used were the Larkspur Ferry not in service. Comparison of results presented in Table 3 (page 8) with Table 1 indicate that, to an even greater extent than ferry users in general, feeder bus passengers were diverted from Golden Gate Bus Transit. Conversely, commuters who formerly drove to San Francisco were more likely to drive to the ferry terminal.

TABLE 3

Prior Mode of Feeder Bus Users - Southbound Only

	<u>AM Commute February 7</u>	<u>Remainder of Weekday S.B. Trips</u>	<u>Weekend</u>
	<u>%</u>	<u>%</u>	<u>%</u>
Auto	18.1	46.2	23.7
Carpool	3.3	0.0	2.6
Sausalito Ferry	1.1	3.8	7.9
GGT Bus	75.8	26.9	42.1
Other	1.7	3.8	0.0
Would not have made trip	0.0	19.3	23.7
TOTAL	100.0	100.0	100.0
Sample Size	182	26	38

Source: February 6 and 7 Survey

Alternate Modes

The February survey asked, "When you do not use the Larkspur Ferry, what means of transportation do you mostly use?" A reasonable assumption might be that ferry passengers would use their "prior mode" on days when they do not use the ferry. However, as shown on Table 4 (page 9), the automobile is by far the most popular alternative mode, while it was secondary to Golden Gate Bus Transit as a prior mode. This is partially explained by answers to the question, "When you have not used the Ferry, we would like to know why not," which are listed in Table 16 (Appendix page A-5). During the commute periods 40% of all respondents answered, "I needed to have my automobile."

TABLE 4

Alternative Mode Used

	<u>AM & PM Commutes February 7</u>	<u>Midday February 7</u>	<u>Weekend Sunday February 6</u>
	<u>%</u>	<u>%</u>	<u>%</u>
Auto/Drive alone	50.3	63.8	72.5
Carpool	6.1	7.7	6.0
Sausalito Ferry	1.6	1.8	2.9
Golden Gate Bus	40.0	20.4	14.2
Other	2.0	6.3	4.4
TOTAL	100.0	100.0	100.0
Sample Size	553	221	563

Source: February 6 and 7 Survey

SCHEDULING ¹

A.M. Commute

Analysis of preferred arrival times in San Francisco for the A.M. commute are based on the March 18th survey in which passengers were asked, "On weekdays, what time of day would you like to arrive at the San Francisco Ferry landing?" Responses are plotted graphically in five minute intervals from 7:15 to 9:15 A.M. on Table 5 (page 11) and in fifteen minute intervals from 6:00 to 10:00 A.M. on Table 6 (page 12).

Significant findings include:

- Table 6 shows that the two most popular arrival times, 7:45 and 8:15 A.M. are already being served.
- The third most popular arrival time on Table 6 is 8:00 A.M.
- While the first three arrivals, as shown on Table 6, serve definite peaks in preferred arrival times, the fourth trip arrives twenty minutes after a significant peak at 8:45 A.M. The 8:45 A.M. peak should be served when the third vessel begins service.

¹ Throughout all discussion of preferred arrival and departure times, it should be borne in mind that this is a survey of people already using the ferry and who are, therefore, at least partially satisfied with the schedule.

TABLE 5

Preferred Arrival Times at the S.F. Ferry Landing of Passengers on the Five
Morning Commute Trips on Friday, March 18, 1977

Answers are grouped to 5 minute intervals.

Vertical lines represent scheduled arrival times in effect on the date of this survey.

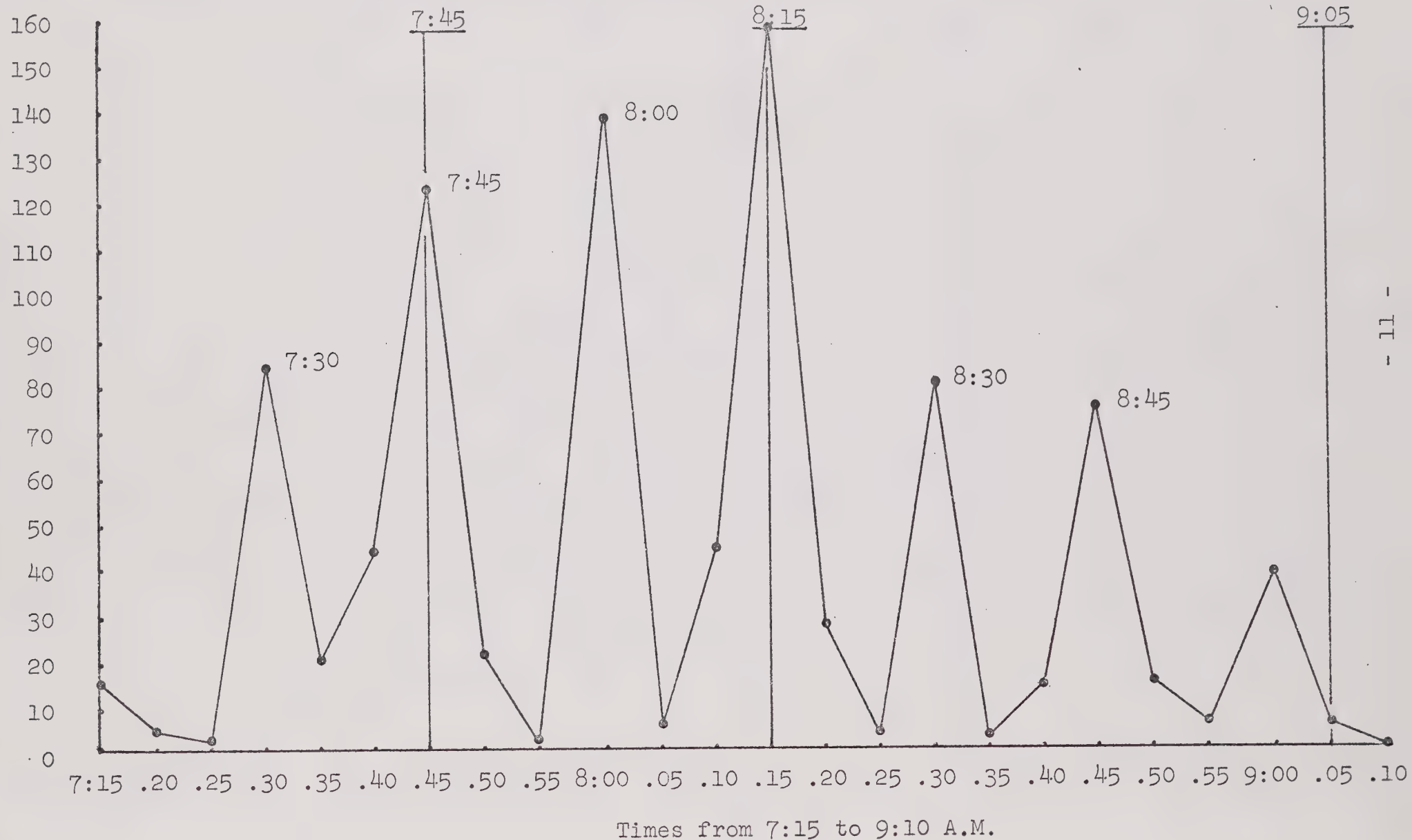
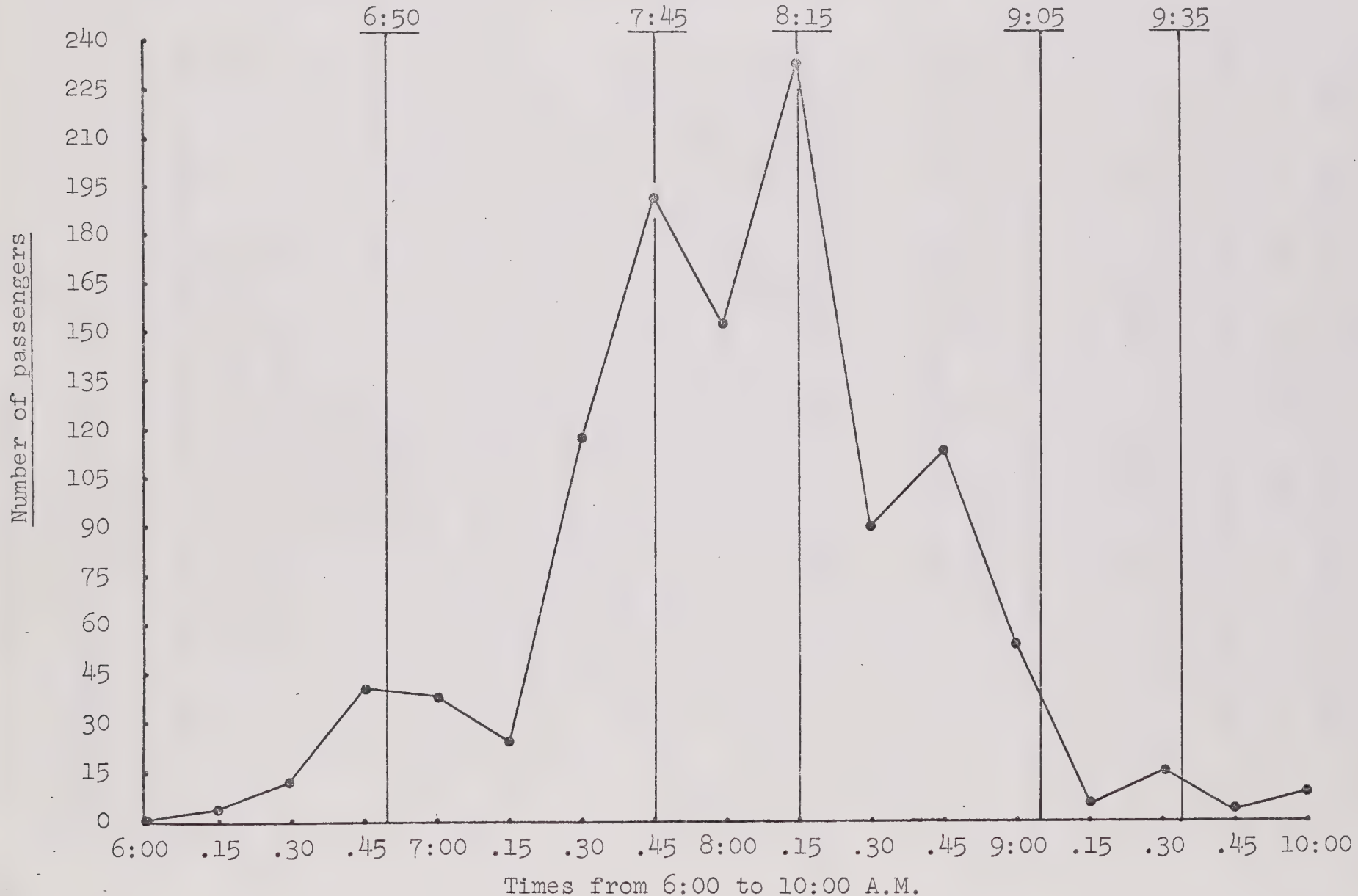


TABLE 6

Preferred Arrival Times at S.F. Ferry Landing of Passengers on the Five
Morning Commute Trips on Friday, March 18, 1977

Answers are grouped to nearest 15 minutes. Table 5 shows answers at 5 minute intervals. Vertical lines represent scheduled arrival times in effect at the time of this survey.



P.M. Commute

Preferred departure times for the P.M. commute were taken from the February 6 and 7 survey on which passengers were asked, "On weekdays, what time of day would you like most to be able to leave from San Francisco going to Larkspur?" Responses shown on Table 7 (page 14) indicate that the most often preferred departure time was 5:15 P.M. This coincides with the most highly patronized P.M. commute trip departing at 5:20 P.M. As Table 7 would suggest, ferry trips which currently depart San Francisco at 6:55 and 7:50 are lightly patronized (during the last week in April averages were less than 100 on the former and less than 50 on the latter).

Table 7 shows a 6:00 P.M. departure to be much more popular than a 6:15 departure. This is supported by the fact that the 6:00 departure, in effect through April 8th, averaged 248 per trip during the period April 1-7; while the 6:15 departure, in effect since April 11, averaged 20% less during the last week in April.

Weekend Service

Preferred departure times for weekends were taken from questionnaires gathered Sunday and Monday February 6 and 7. Passengers were asked, "On weekends, what time of day would you like to be able to leave . . . Larkspur Ferry Terminal going to San Francisco? . . . San Francisco going to Larkspur?" Responses for southbound trips are shown on Table 8 (page 15) and for northbound trips on Table 9 (page 16).

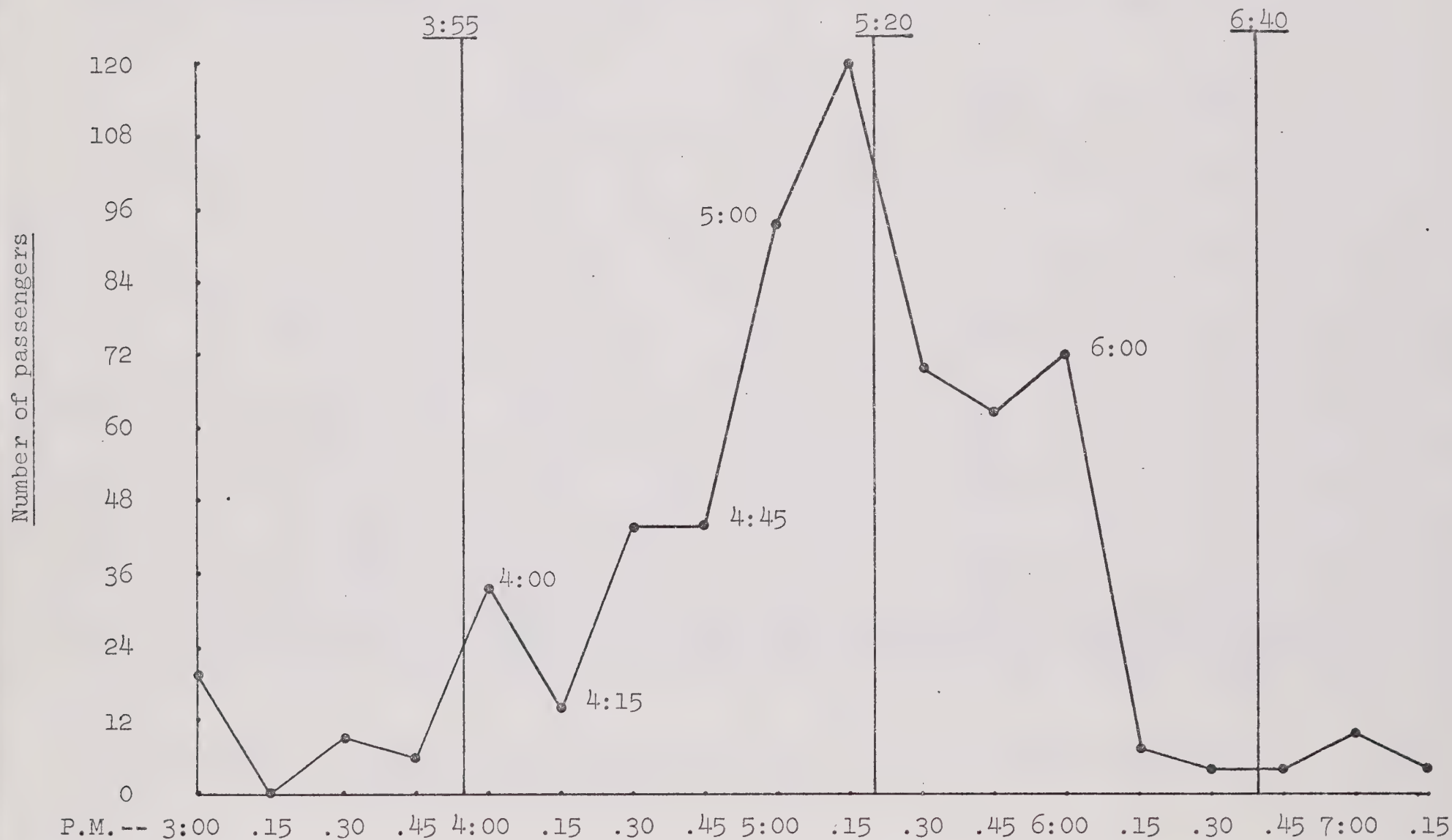
- Both tables illustrate the fact that weekend travelers prefer to have vessels depart on the hour. Referring to the three previous tables, note that commuters more often prefer arrivals and departures 15 minutes before or after the hour.

TABLE 7

Preferred Departure Times for Weekday Northbound Ferry Trips

Answers are grouped to 15 minute intervals.

Vertical lines represent scheduled departure times in effect on the date of this survey.



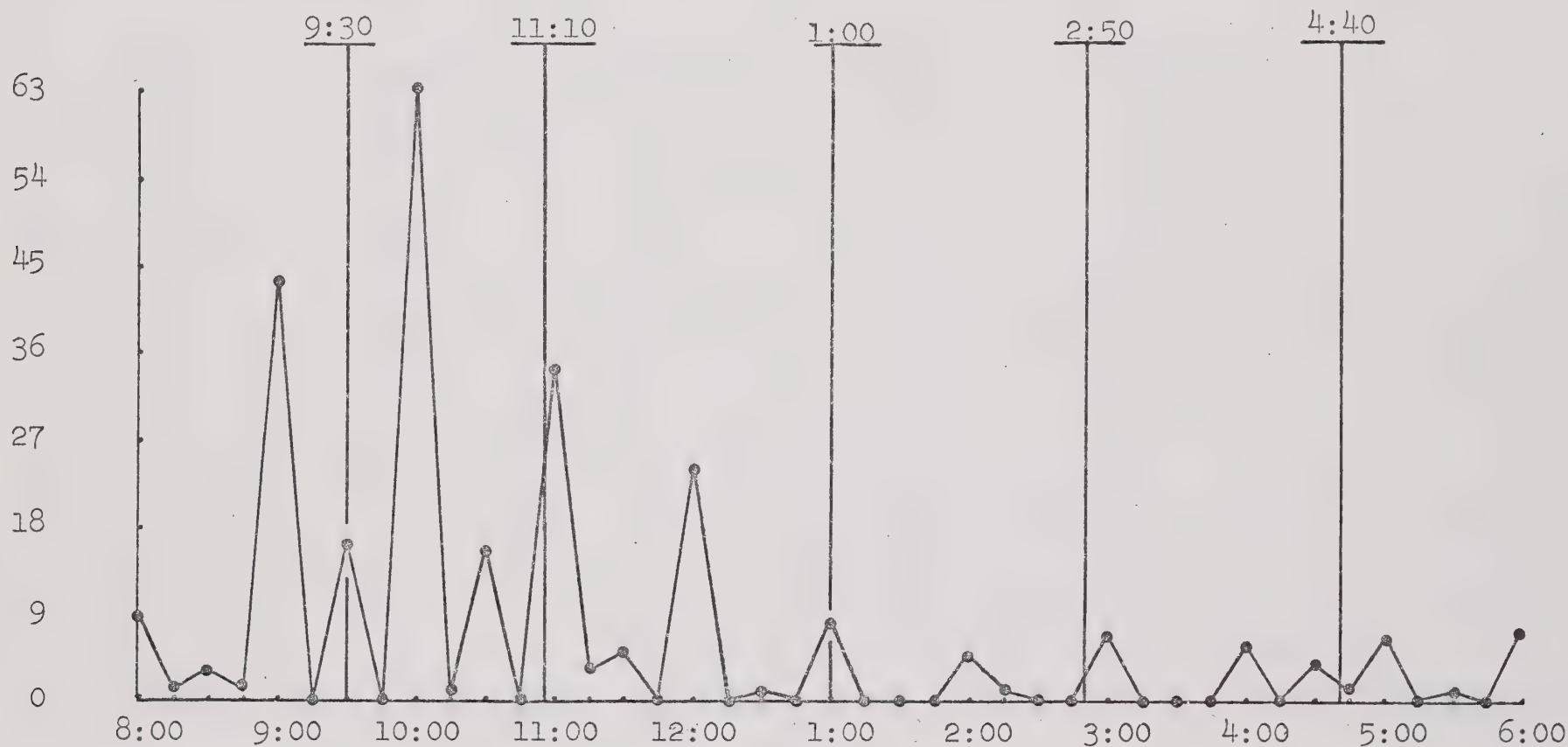
Source: February 6 and 7 Survey; 609 of the 1,508 passengers surveyed on both days answered this question; 90% of those who answered listed times from 3:00 to 7:15.

TABLE 8

Preferred Departure Times for Weekend Southbound Ferry Trips of Passengers
Surveyed on February 6 and 7, 1977

Answers are grouped into 15 minute intervals.

Vertical lines represent scheduled departure times in effect on the dates of this survey.



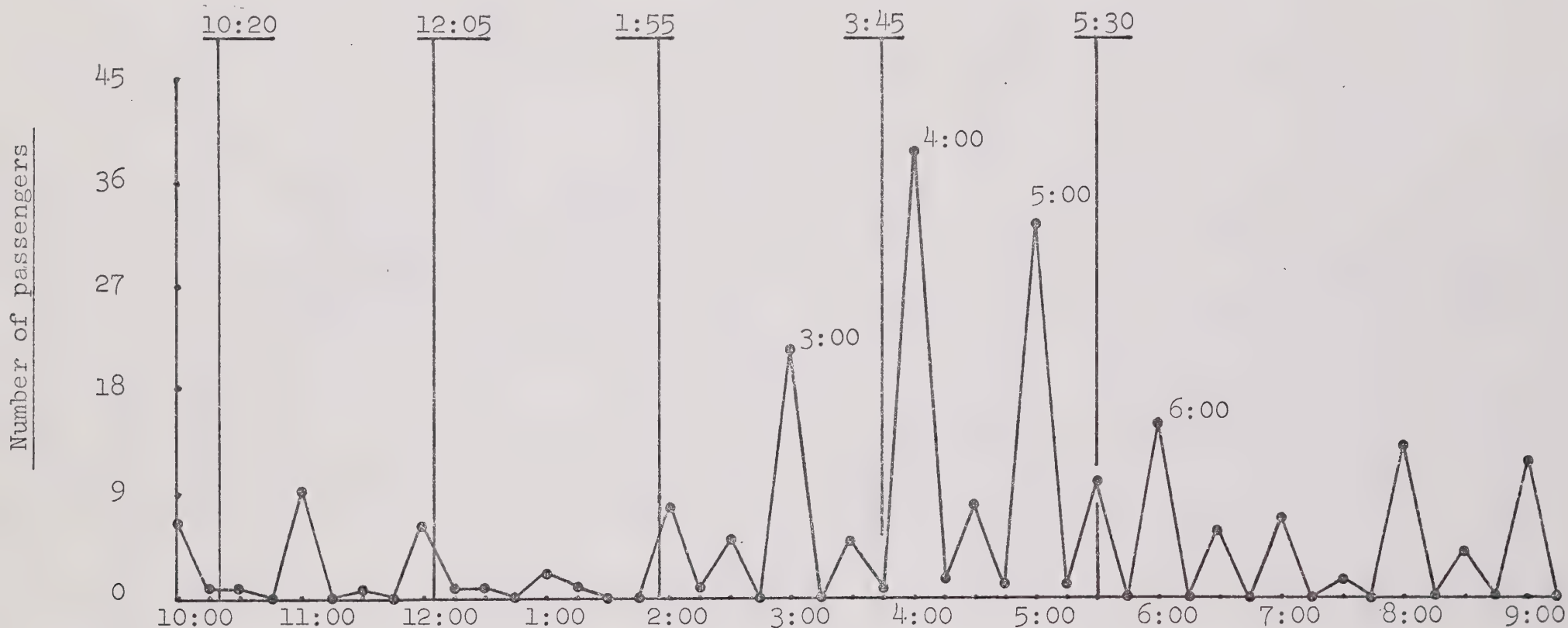
Source: February 6 and 7 Survey; 293 of the 1,508 passengers surveyed on both days answered this question.

TABLE 9

Preferred Departure Times for Weekend Northbound Ferry Trips of PassengersSurveyed on February 6 and 7, 1977

Answers are grouped into 15 minute intervals.

Vertical lines represent scheduled departure times in effect on the dates of this survey.



Source: February 6 and 7 Survey; 272 of the 1,508 passengers surveyed on both days answered this question.

Weekend Service - continued

- Preferred departure times for southbound trips, in order of popularity are:

10:00 A.M.
9:00 A.M.
11:00 A.M.
12:00 Noon
9:30 A.M.
10:30 A.M.

- Preferred departure times for northbound trips in order of popularity are:

4:00 P.M.
5:00 P.M.
3:00 P.M.
6:00 P.M.

- There appears to be very little demand for northbound trips in the morning.

SOCIO-ECONOMIC INFORMATION

Age

Age ranges for respondents to the February 6 and 7 survey are shown for the three time periods (commute, midday and weekend) on Table 10 (page 18).

- As was the case on Golden Gate Transit commuter buses¹, about 85% of commute period users fell into the two categories of 25-44 and 45-59 years of age. However, on the Larkspur Ferry, the trend is toward the younger of these two groups:

	<u>25-44</u>	<u>45-59</u>
Commuter bus	53%	31%
Larkspur Ferry Commute	65%	23%

¹ Analysis of Transit Surveys, GGBHTD,
September 1976, page 13.

Age - continued

TABLE 10

Age of Respondents for Three Time Periods

<u>Age</u>	<u>Commute</u> %	<u>Midday</u> %	<u>Weekends</u> %
0-5	0.2	0.0	0.0
6-14	0.0	0.0	3.7
15-19	0.7	3.9	7.5
20-24	6.4	7.8	11.3
25-44	64.7	44.4	50.0
45-59	23.0	22.6	17.7
60-64	2.5	9.6	6.5 3
65 and over	2.5	11.7	6.5
TOTAL	100.0	100.0	100.0
Sample Size	561	230	628

Source: February 6 and 7 Survey

* * *

- During the midday period on Monday, February 7, over 21% of the respondents were age 60 or over. This is much higher than the proportion of Marin's population who were 60 or over (11%)¹ and the proportion of passengers on G.G.T. "basic" transbay bus service who were 60 or over (12%)².

¹ U.S. Census, 1970

² Analysis of Transit Surveys, page 13.

Age - continued

- Proportions of children and young adults are highest on weekends. While this fact is evident on Table 10, it is understated because many children were either not given a questionnaire or their parents said one questionnaire would be enough for the whole family.

Sex

Sex of respondents to the February 6 and 7 survey are shown on Table 11 (below).

- While the proportion of males on G.G.T. commuter bus service was high at 63%¹, that proportion was even higher on Larkspur Ferry commute service at 73%.

* * *

TABLE 11

Sex of Respondents for
Three Time Periods

<u>Sex</u>	<u>AM & PM Commute</u>	<u>Midday</u>	<u>Weekend</u>
Male	73.0%	58.8%	46.6%
Female	27.0%	41.2%	53.4%
TOTAL	100.0%	100.0%	100.0%
Sample Size	559	233	609

Source: February 6 and 7 Survey

¹ Analysis of Transit Surveys, page 13.

Sex - continued

- Again, on midday Larkspur Ferry service, males outnumbered females to a more significant degree than on G.G.T. "basic" transbay bus service.¹

	<u>Male</u>	<u>Female</u>
Bus	53.5%	46.5%
Ferry	58.8%	41.2%

- Only on Sunday was there no significant difference between numbers of males and females.

Auto Ownership

The February 6 and 7 survey asked, "How many automobiles does your household own?" Results are presented in Table 12 (page 21) for the three time periods.

- There were no significant differences from one time period to another.
- Auto ownership among Larkspur Ferry commuters was essentially the same as for Golden Gate Bus Transit commuters.¹
- The proportion of midday and weekend Ferry users reporting ownership of no automobiles (7% - 8%) was the same as for all Marin County residents (7%), but much lower than for users of G.G.T. "basic" transbay bus service (36%).¹

¹ Analysis of Transit Surveys, page 13.

TABLE 12

Number of Automobiles Owned per Household

	<u>AM & PM Commute</u>	<u>Midday</u>	<u>Weekend</u>
	<u>%</u>	<u>%</u>	<u>%</u>
None	2.1	7.3	8.3
One	41.2	34.0	33.7
Two	46.4	44.0	42.3
Three or more	10.3	14.7	15.7
TOTAL	100.0	100.0	100.0
Sample Size	561	232	623

Source: February 6 and 7 Survey.

Income

Respondents to the February 6 and 7 survey were asked, "What is your annual household income?" Responses are compared to incomes of bus transit passengers in Table 13 (page 22). Important findings include:

- Ferry users during commute periods tended to have higher incomes than ferry users during the midday and on weekends; the same was true for Golden Gate Bus Transit passengers.
- There was no significant difference in incomes between Ferry commuters and Bus commuters.
- Users of midday and weekend Ferry service had higher incomes than users of "basic" transbay bus service:

	<u>Ferry</u>	<u>Bus</u>
Less than \$4,000	7%	28%
\$25,000 or more	34%	11%

TABLE 13

Incomes of Larkspur Ferry Passengers
Compared With Bus Transit Passengers

	Larkspur Ferry Commute Periods	Marin/SF Commute Bus Service (1975)	Larkspur Midday & Weekend *	Marin/SF Basic Bus Service (1975)
	%	%	%	%
Less than \$4,000	1.1	2.8	6.9	27.7
\$4,000 to \$9,999	7.3	12.0	11.5	22.0
\$10,000 to \$11,999	7.5	4.6	8.7	9.3
\$12,000 to \$14,999	7.7	11.1	12.4	11.7
\$15,000 to \$24,999	24.3	30.6	26.0	17.8
\$25,000 or more	52.1	38.9	34.5	11.5
TOTAL	100.0	100.0	100.0	100.0
Sample Size	532	114	736	382

* Midday and weekend were combined because there was no significant difference in responses to this question.

Sources: February 6 and 7 Surveys;
Analysis of Transit Surveys, GGBHTD, Sept. 1976, pg. 13

Trip Purpose

The February 6 and 7 survey asked, "What is your main trip purpose? (check one only)". Table 14 (page 24) presents answers for the three time periods.

- As was the case on G.G.T. commute period service, more than 90% of passengers on the Larkspur Ferry during commute periods were going to or returning from work.
- During non-commute periods, the predominant trip purpose was "Recreation/Entertainment/Ferry Ride"; 46% midday and 84% on Sunday.
- In comparison to G.G.T. "basic" transbay bus service, few Larkspur Ferry passengers were traveling to work or to visit friends.

	<u>Visit</u>	<u>Work</u>
Basic transbay - bus	21%	43%
Larkspur Ferry - midday	6%	25%
Larkspur Ferry - Sunday	6%	3%

TABLE 14

Trip Purposes of Larkspur Ferry Passengers

	<u>AM & PM Commute</u>	<u>Midday</u>	<u>Weekend</u>
	<u>%</u>	<u>%</u>	<u>%</u>
Work	91.9	25.3	2.8
School	1.2	3.6	0.3
Shopping	0.7	5.2	1.2
Personal Business	2.6	11.5	1.7
Medical	0.2	1.2	1.7
Recreation/Entertainment/ Ferry Ride	1.9	46.0	83.7
Social (visit friends)	1.1	5.6	6.0
Other	0.2	0.8	1.0
No Answer	0.2	0.8	1.6
TOTAL	100.0	100.0	100.0
Sample Size	567	252	689

Source: February 6 and 7 Survey

ORIGINS and DESTINATIONS

Both questionnaires asked, "Where do you live?" Respondents were asked to list city, street and cross street. Table 15 (page 26) summarizes counties of residence of Larkspur Ferry passengers by time period. Significant findings include:

- 98% of all respondents during commute periods were residing in Marin County.
- There were no significant differences in distribution between midday and weekend trips, when Marin County's share was between 55% and 60%.
- San Francisco's share of patronage was highest during midday (14.9%) and weekend (17.5%) periods. Almost no San Franciscans use the ferry during commute hours.

Maps 1 through 5 (pages 28 through 32) show specific residential locations in Central and Northern Marin of A.M. commute passengers on March 18; triangles represent passengers arriving at the Larkspur Ferry Terminal by automobile and dots represent passengers using the feeder bus service. Note that these maps are reproduced from two larger maps and that they overlap. The original maps are on display in the Office of Planning and Research.

- 26 passengers originated in East Corte Madera, a neighborhood unserved by feeder buses.
- 21 passengers lived in Loch Lomond and Peacock Gap beyond the present terminal of the #31 feeder bus.

TABLE 15

Counties of Residence of Larkspur Ferry Passengers

<u>County</u>	A.M. 1 <u>Commute</u> %	P.M. 2 <u>Commute</u> %	2 <u>Midday</u> %	3 <u>Weekend</u> %	Estimated 4 <u>Overall</u> %
Marin	98.0	98.70	59.7	54.0	75.4
Sonoma	1.1		3.6	4.2	2.4
San Francisco		0.65	14.9	17.5	9.1
San Mateo			0.5	3.1	0.9
Santa Clara			0.9	2.1	0.8
Alameda	0.2		3.2	6.8	2.8
Contra Costa			3.6	2.8	1.8
Napa			0.9	0.8	0.5
Solano				0.2	0.1
Other Ca.	0.3		5.0	5.9	3.1
Out of State	0.4	0.65	7.7	2.6	3.1
TOTAL	100.0	100.0	100.0	100.0	100.0
Sample Size:	1,149	156	221	615	

1 Source: March 18 Ferry Questionnaire

2 Source: February 7 Ferry Questionnaire

3 Source: February 6 (Sunday) Ferry Questionnaire

4 Derived by applying percentages for each time period to Revised Ferry Patronage Projections for FY 1977-78 (per memo to Jerome M. Kuykendall from Ken Hough dated May 2, 1977)

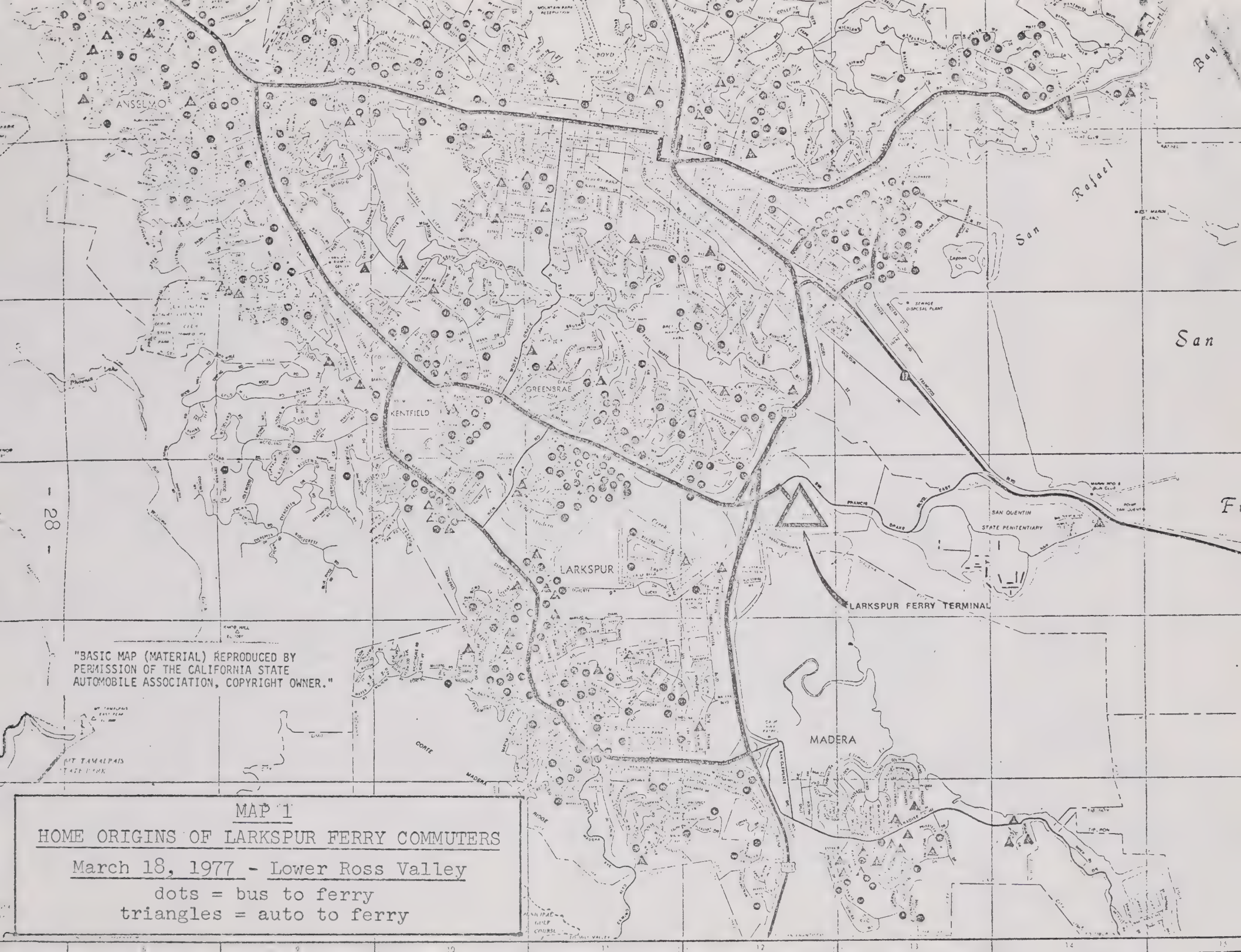
* * *

- 30 passengers gave addresses in the Western section of Terra Linda, beyond walking distance from the #37 ferry feeder bus. Another 18 passengers lived in Marinwood north of the terminal of the #37 bus.
- 24 passengers lived in Fairfax to the west of, and beyond walking distance from, the present terminal at Fairfax Depot.

- 65 patrons gave addresses in the Novato/Ignacio area where no feeder bus service is available.
- Approximately one-half of all ferry commuters lived within one-quarter mile of feeder bus routes.

Maps 6 through 10 (pages 33 through 37) show the destinations of ferry commuters in downtown San Francisco for each of the five commute trips. There appears to be a standard distribution concentrated in the Financial District overlaid with the following concentrations:

- The second sailing, arriving at 7:45 A.M., carried 55 people who were destined for the three blocks bounded by Main, Market, Mission and First Streets. Other sailings carried from one to twenty people to this area.
- The second sailing also carried a concentration of commuters destined for the Civic Center; 15 compared to one to five on other trips.
- The third sailing, arriving at 8:15 A.M., showed the most significant concentration along California Street.
- The 8:15 arrival also carried the greatest number of passengers destined for parts of San Francisco off the map.



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MAP 1

HOME ORIGINS OF LARKSPUR FERRY COMMUTERS

March 18, 1977 - Lower Ross Valley

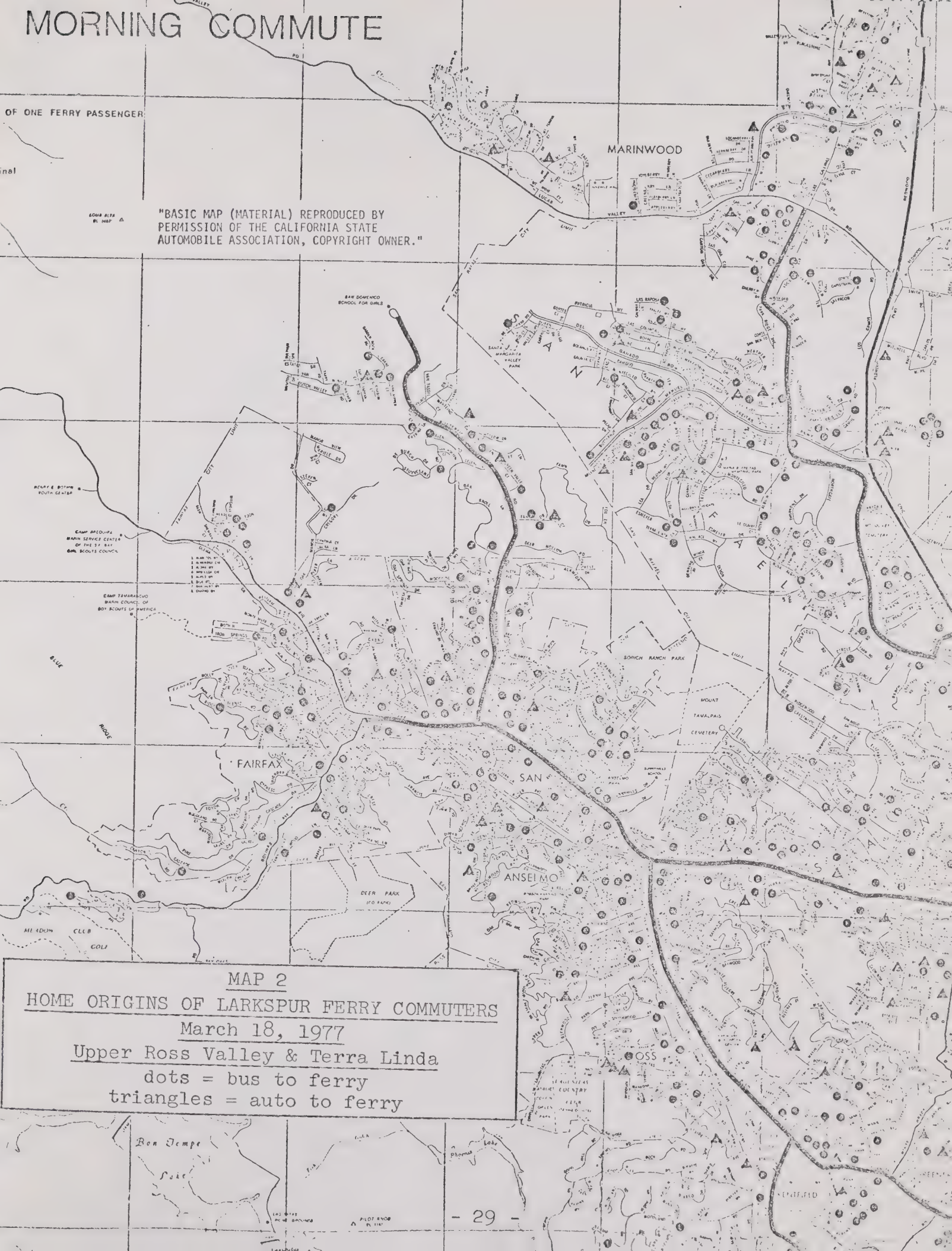
dots = bus to ferry
triangles = auto to ferry

MORNING COMMUTE

OF ONE FERRY PASSENGER

SCALA 1:250,000
R. 1967

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MAP 2

HOME ORIGINS OF LARKSPUR FERRY COMMUTERS

March 18, 1977

Upper Ross Valley & Terra Linda

dots = bus to ferry

triangles = auto to ferry

San Rafael
 San Anselmo
 Fairfax Larkspur
 Corte Madera Ross
 Marinwood Kentfield
 Greenbrae Woodacre
 Santa Venetia

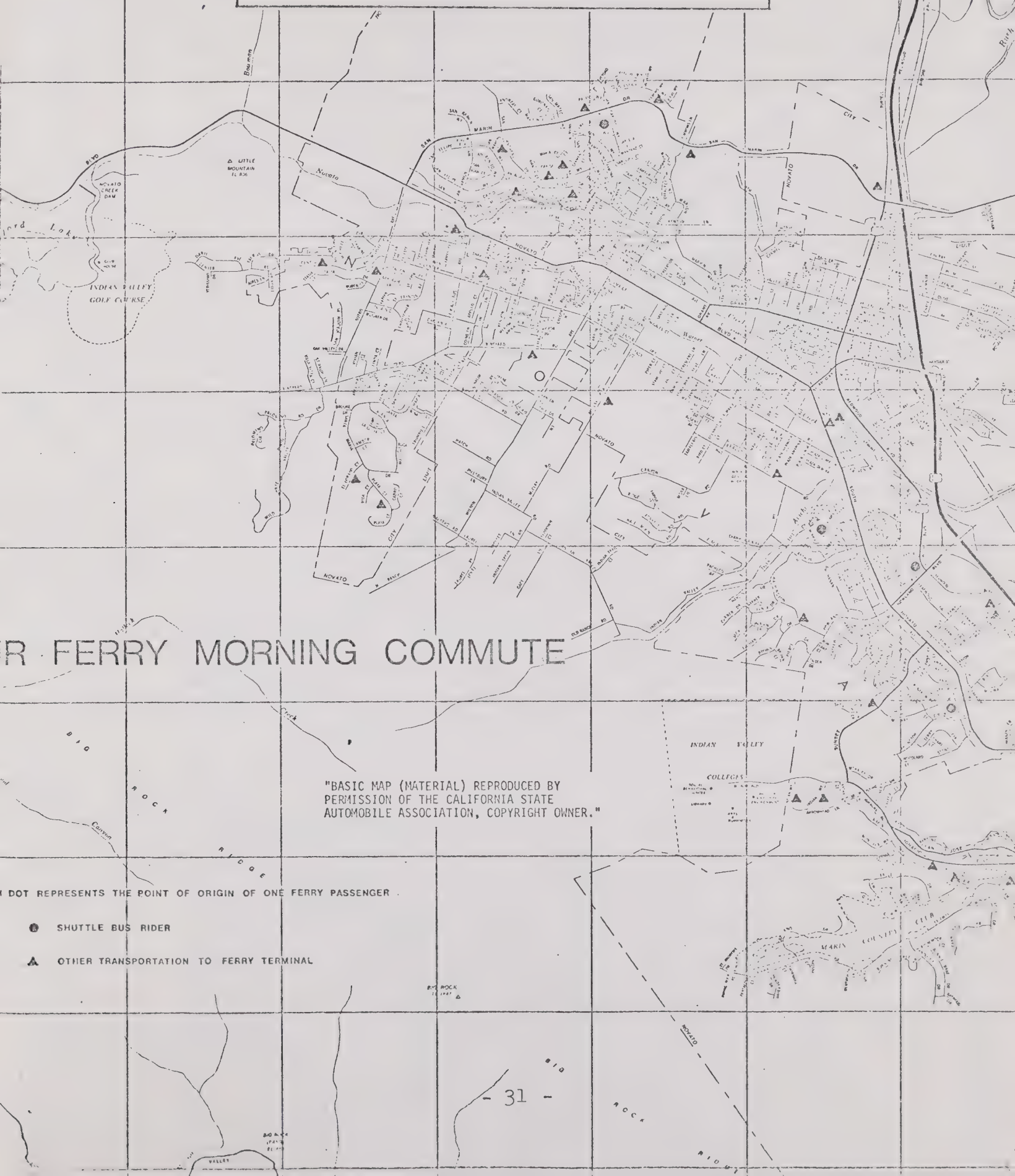
MAP 3
 HOME ORIGINS OF LARKSPUR FERRY COMMUTERS
 March 18, 1977 - East San Rafael
 dots = bus to ferry
 triangles = auto to ferry

LEGEND
 FREIGHTWAYS U.S. HIGHWAY NUMBERS
 MAIN HIGHWAYS STATE HIGHWAY NUMBERS
 UNDER CONSTRUCTION BLOCK NUMBERS
 ONE WAY STREETS
 SCALE
 FEET 0 1000 2000 3000 4000
 METERS 0 400 800 1200 1600
 ONE INCH = ONE MILE
 CARTOGRAPHIC DEPARTMENT
 COPY 8-1-77
 CALIFORNIA STATE AUTOMOBILE ASSOCIATION
 180 VAN NESS AVENUE SAN FRANCISCO, CALIF.



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MAP 4
HOME ORIGINS OF LARKSPUR FERRY COMMUTERS
March 18, 1977 - West Novato
dots = bus to ferry
triangles = auto to ferry



R FERRY MORNING COMMUTE

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DOT REPRESENTS THE POINT OF ORIGIN OF ONE FERRY PASSENGER

● SHUTTLE BUS RIDER

▲ OTHER TRANSPORTATION TO FERRY TERMINAL

MAP 5
HOME ORIGINS OF LARKSPUR FERRY COMMUTERS
March 18, 1977 - East Novato
dots = bus to ferry
triangles = auto to ferry



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MAP 6
DESTINATIONS OF LARKSPUR FERRY COMMUTERS
March 18, 1977 - 6:50 AM Arrival
(each dot represents one person)



MAP 7
DESTINATIONS OF LARKSPUR FERRY COMMUTERS
March 18, 1977 - 7:45 AM Arrival
(each dot represents one person)



MAP 8
DESTINATIONS OF LARKSPUR FERRY COMMUTERS
March 18, 1977 - 8:15 AM Arrival
(each dot represents one person)



MAP 9

DESTINATIONS OF LARKSPUR FERRY COMMUTERS

March 18, 1977 - 9:05 AM Arrival

(each dot represents one person)



MAP 10

DESTINATIONS OF LARKSPUR FERRY COMMUTERS

March 18, 1977 - 9:35 AM Arrival

(each dot represents one person)



FERRY QUESTIONNAIRE

1-4 I.D.No.

1688

In order to schedule our Ferry and Bus Transit service to the needs of our passengers we would appreciate your answering the following questions. If you have completed a questionnaire earlier today, please do not complete a second one. Pencils are available from the surveyor. Please return this form to the surveyor at the end of your trip. Please check only empty boxes, ignore boxes with numbers in them.

- 5 1. How did you get to the Ferry Terminal? (Check one only)
- | | |
|---|---|
| <input type="checkbox"/> Dropped off | 1 |
| <input type="checkbox"/> Auto/drove alone | 2 |
| <input type="checkbox"/> Carpool | 3 |
| <input type="checkbox"/> Feeder Bus | 4 |
| <input type="checkbox"/> Bicycle | 5 |
| <input type="checkbox"/> Walk | 6 |
| <input type="checkbox"/> Taxi | 7 |
| <input type="checkbox"/> Other (specify) | 8 |

- 6 2. What is your main trip purpose? (Check one only).
- | | |
|---|---|
| <input type="checkbox"/> Work | 1 |
| <input type="checkbox"/> School | 2 |
| <input type="checkbox"/> Shopping | 3 |
| <input type="checkbox"/> Personal business | 4 |
| <input type="checkbox"/> Medical Appt. | 5 |
| <input type="checkbox"/> Recreation/Entertainment/ Ferry ride | 6 |
| <input type="checkbox"/> Social (visit friends) | 7 |
| <input type="checkbox"/> Other (specify) | 8 |

- 7 3. How would you most likely have made this trip if the Larkspur Ferry were not in service?
- | | | | | | |
|---|---|--|---|---|---|
| <input type="checkbox"/> Auto/drove alone | 1 | <input type="checkbox"/> Sausalito Ferry | 3 | <input type="checkbox"/> Other | 5 |
| <input type="checkbox"/> Carpool | 2 | <input type="checkbox"/> Golden Gate Bus | 4 | <input type="checkbox"/> Would not have made trip | 6 |

- 8 4. How many days per week do you use the Larkspur Ferry....
- | | |
|--|--|
| 8 going to San Francisco? | 9 going to Larkspur? |
| <input type="checkbox"/> less than 1 0 | <input type="checkbox"/> less than 1 0 |
| <input type="checkbox"/> 1 1 | <input type="checkbox"/> 1 1 |
| <input type="checkbox"/> 2 2 | <input type="checkbox"/> 2 2 |
| <input type="checkbox"/> 3 3 | <input type="checkbox"/> 3 3 |
| <input type="checkbox"/> 4 4 | <input type="checkbox"/> 4 4 |
| <input type="checkbox"/> 5 5 | <input type="checkbox"/> 5 5 |
| <input type="checkbox"/> 6 6 | <input type="checkbox"/> 6 6 |
| <input type="checkbox"/> 7 7 | <input type="checkbox"/> 7 7 |

- 10 5. How many days per week do you travel between Marin and San Francisco?
- | | |
|--|------------------------------|
| <input type="checkbox"/> less than 1 0 | <input type="checkbox"/> 4 4 |
| <input type="checkbox"/> 1 1 | <input type="checkbox"/> 5 5 |
| <input type="checkbox"/> 2 2 | <input type="checkbox"/> 6 6 |
| <input type="checkbox"/> 3 3 | <input type="checkbox"/> 7 7 |

- 11 6. In the future as the G.T. Sonoma and G.T. San Francisco are put into service, do you anticipate using the Larkspur Ferries
- | | | | | | |
|---|---|---|---|---------------------------------------|---|
| <input type="checkbox"/> more frequently? | 1 | <input type="checkbox"/> less frequently? | 2 | <input type="checkbox"/> same as now? | 3 |
|---|---|---|---|---------------------------------------|---|

- 12 7. Do you make your Ferry trips to San Francisco predominantly....
- | | | | |
|---|---|--|---|
| <input type="checkbox"/> on weekends? | 1 | <input type="checkbox"/> (leave Larkspur at 7:10 or 8:30 am) | 2 |
| <input type="checkbox"/> during the A.M. Commute? | | <input type="checkbox"/> (leave Larkspur from 10am to 3 pm) | 3 |
| <input type="checkbox"/> during the midday? | | <input type="checkbox"/> (leave Larkspur at 4:35pm or 6:00 pm) | 4 |
| <input type="checkbox"/> during P.M. Commute? | | | |

- 13 8. Do you make your Ferry trips from San Francisco to Larkspur predominantly...
- | | | | |
|---|---|--|---|
| <input type="checkbox"/> on weekends? | 1 | <input type="checkbox"/> (leave San Francisco at 7:50am) | 2 |
| <input type="checkbox"/> during the A.M. Commute? | | <input type="checkbox"/> (leave San Francisco from 9:10am to 3:55pm) | 3 |
| <input type="checkbox"/> during the midday? | | <input type="checkbox"/> (leave San Francisco at 5:20pm or 6:40pm) | 4 |
| <input type="checkbox"/> during the P.M. Commute? | | | |

9. On weekdays what time of day would you like most to be able to leave...

Official Use

Larkspur Ferry Terminal going to San Francisco? ☐ am ☐ pm

14-15

San Francisco going to Larkspur? ☐ am ☐ pm

16-17

10. On weekends what time of day would you like to be able to leave...

Official Use

Larkspur Ferry Terminal going to San Francisco? ☐ am ☐ pm

18-19

San Francisco going to Larkspur? ☐ am ☐ pm

20-21

22

11. When you do not use the Larkspur Ferry, what means of transportation do you mostly use?

- ☐ Auto/drive alone ☐ 1
☐ Carpool ☐ 2
☐ Sausalito Ferry ☐ 3

- ☐ Golden Gate Transit Bus ☐ 4
☐ Other (specify) ☐ 5

23-28

12. When you have not used the Ferry, we would like to know why not.
(Check as many as apply)

- ☐ The time schedule did not fit my needs. ☐ 23
☐ There is no feeder bus service to my neighborhood. ☐ 24
☐ My destination was not near the San Francisco Ferry Terminal. ☐ 25
☐ The weather was too cold, windy or wet. ☐ 26
☐ I needed to have my automobile. ☐ 27
☐ Other (specify) ☐ 28

13. Where do you live?

City

Official Use

Street

☐

29-31

Cross street

The following questions are designed to tell us the beginning and end points of this one-way trip.

14. What is your final destination?

Check if you are going home ☐

Official Use

City

Street

☐

32-34

Cross street

15. Where did you begin this trip?

Check if you came from home ☐

Official Use

City

Street

☐

35-37

Cross street

38

16. What is your age range?

- ☐ under 5 ☐ 1 ☐ 15 - 19 ☐ 3 ☐ 25 - 44 ☐ 5 ☐ 60 - 64 ☐ 7
☐ 5 - 14 ☐ 2 ☐ 20 - 24 ☐ 4 ☐ 45 - 59 ☐ 6 ☐ 65 or over ☐ 8

39

17. Are you ☐ male ☐ 1 or ☐ female ☐ 2

40

18. How many automobiles does your household own?

- ☐ None ☐ 0 ☐ One ☐ 1 ☐ Two ☐ 2 ☐ Three or more ☐ 3

41

19. What is your annual household income?

- ☐ Less than \$4,000 ☐ 1 ☐ 12,000 to 14,999 ☐ 4
☐ \$4,000 to \$9,999 ☐ 2 ☐ 15,000 to 24,999 ☐ 5
☐ 10,000 to 11,999 ☐ 3 ☐ 25,000 or more ☐ 6

20. Please use this space for any additional comments:



Thank you for your cooperation.

GOLDEN GATE FERRY GOLDEN GATE BRIDGE, HIGHWAY AND TRANSPORTATION DISTRICT

FERRY QUESTIONNAIRE

In order to schedule our Ferry and Bus Transit service to the needs of our passengers we would appreciate your answering the following questions. If you have completed a questionnaire earlier today, please do not complete a second one. Pencils are available from the surveyor. Please return this form to the surveyor at the end of your trip. Please check only empty boxes, ignore boxes with numbers in them.

1. How did you get to or from the Larkspur Ferry Terminal (check one only)

1

- ☐ Dropped off 1
- ☐ Auto/drove alone 2
- ☐ Carpool 3
- ☐ Feeder Bus 4
- ☐ Bicycle 5
- ☐ Walk 6
- ☐ Taxi 7
- ☐ Other (specify) 8

2. Which Ferry schedules will you use today?

- 2 a. Larkspur to San Francisco (circle one) 1 2 3 4 5 6
 6:15 7:10 7:40 8:30 9:00 Other _____
- 3 b. San Francisco to Larkspur (circle one) 1 2 3 4 5 6 7
 3:55 4:40 5:20 6:00 6:40 Will not use Other _____

3. How would you most likely have made this trip if the Larkspur Ferry were not in service?

- 4 ☐ Auto/drive alone 1 ☐ Sausalito Ferry 3 ☐ Other _____ 5
☐ Carpool 2 ☐ Golden Gate Bus 4 ☐ Would not have made trip 6

4. On weekdays what time of day would you like to arrive at the San Francisco Ferry landing?

am pm

Official Use

Official Use

5. Where do you live?

City _____

Official Use

Street _____

9 10

Cross street _____

The following questions are designed to tell us the beginning and end points of this one-way trip.

6. What is the final destination of this trip?

City _____

Check if you are going home ☐

Street _____

Official Use

Cross Street _____

11 12

7. Where did you begin this trip?

City _____

Check if you came from home ☐

Street _____

Official Use

Cross Street _____

13 14

TABLE 16

Reasons Why Ferry Was Not Used

(When you have not used the ferry, we would like to know why not.)

	<u>Commute Hours</u>	<u>Midday</u>	<u>Weekend</u>
	<u>%</u>	<u>%</u>	<u>%</u>
The time schedule did not fit my needs	60.7	34.9	18.9
There is no feeder bus service to my neighborhood.	10.4	8.8	6.4
My destination was not near the San Francisco Ferry Terminal.	7.4	15.5	21.7
The weather was too cold, windy or wet.	3.5	5.6	4.6
I needed to have my automobile.	40.0	27.0	23.9
Other	5.3	8.7	12.8
Sample Size	567	252	689

Note: Percentages are of the total number of respondents during each time period. Due to multiple answers, percentages add to more than 100%.

Source: February 6 and 7 Survey.

GOLDEN GATE FERRY SYSTEM

FACT SHEET

FERRY SYSTEM PLAN: The Golden Gate Ferry System, division of the Golden Gate Bridge, Highway and Transportation District, is the third element of the District's tri-modal (bridge, bus, ferry) transportation plan to move traffic through the Golden Gate Corridor and across San Francisco Bay. The ferry system's new three-vessel fleet will augment the District's 248 buses, which now transport approximately 9,000 passengers per day during peak commute hours, and its single ferryboat, M. V. (Motor Vessel) Golden Gate, which has carried more than 6 million passengers between Sausalito and San Francisco since it began service in August, 1970.

FERRY SYSTEM OBJECTIVE: When all three ferries are in full service between the system's Larkspur Ferry Terminal and its San Francisco Ferry Terminal, it's projected that 3,200 commuters will be carried each morning, reducing peak period auto traffic on the Golden Gate Bridge by up to 2,500 cars a day.

FERRYBOAT NAMES: G. T. (Gas Turbine) Marin, G. T. Sonoma, G. T. San Francisco

VESSELS' PRINCIPAL CHARACTERISTICS:

Passenger capacity	750
Length overall	165 feet
Beam, extreme	33'4"
Weight	210 tons

ENGINE SPECIFICATIONS: Vessels are powered by three TF 35 Avco Lycoming gas turbine engines, each delivering 2,800 shaft horsepower, for a total capability of 8,400 shaft horsepower.

SERVICE SPEEDS:

25 knots	--	3 engines
21 knots	--	2 engines
16 knots	--	1 engine

SCHEDULE SPECIFICATIONS: At service speed of 25 knots, the ferry will maintain a Bay crossing schedule of approximately 32 minutes to cover 13 statute miles from the Larkspur Ferry Terminal to the San Francisco Ferry Terminal.

POWER TRAIN SPECIFICATIONS: Waterjet propulsion system includes three 36-inch waterjet pumps manufactured by Jacuzzi Bros., Inc. Each propulsion unit is capable of delivering 15,000 pounds of thrust, equivalent to the thrust created by a 727 airline jet engine. Propulsion system, which also provides full steering control, eliminates need for conventional screws and rudders. Each water jet pump is capable of pumping 65,000 gallons of water per minute.

FUEL TYPE: Gas turbine engines require diesel #1 fuel, same as used by District's bus fleet.

HULL CONSTRUCTION: Vessels are of aluminum construction, with each ferry hull fabricated from 250,000 pounds of aluminum supplied by Kaiser Aluminum.

OPERATIONAL SAFETY: Vessels are equipped with most technically advanced radio, radar, and depth sounding gear.

FURNISHINGS & AMENITIES: Three-deck vessels include partially-enclosed astro-dome sun deck; cocktail and snackbar sections; upholstered seating; carpeting throughout all enclosed passenger areas.

DESIGNER OF VESSELS: Nickum & Spaulding Assoc., Seattle

INTERIOR DESIGN: Each vessel has its own interior color scheme. Use of contemporary materials, fabrics and textures in subdued blending colors designed to provide a restful and aesthetically-appealing atmosphere. Interior design provided by Landor & Assoc., San Francisco.

BUILDER OF VESSELS: Campbell Industries, San Diego (awarded contract on competitive bid).

COST OF SYSTEM: Vessels, approximately \$13 million (3). Larkspur, San Francisco Terminals, spare parts, supplies, equipment, etc., \$23.8 million.

FUNDING OF SYSTEM: Urban Mass Transportation Administration is funding approximately \$26.9 million of total cost. Approximately \$10.9 million contributed from District reserves.

FERRY TRANSIT DIVISION MANAGER: Stanley M. Kowleski

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